PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

TAMPEREEN PATENTTITOIMISTO OY
Hermiankatu 12B
FI-33720
FINLAND

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing *(day/month/year)*	1 1 -07- 2005

Applicant's or agent's file reference	FOR FURTHER ACTION
TP103553/MLA	See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/FI 2005/050085	16-03-2005	25-03-2004

International Patent Classification (IPC) or both national classification and IPC
H04L12/66, H04L29/12

Applicant
TELIASONERA FINLAND OYJ et al

1. This opinion contains indications relating to the following items:

- ☒ Box No. I   Basis of the opinion
- ☐ Box No. II   Priority
- ☐ Box No. III   Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV   Lack of unity of invention
- ☒ Box No. V   Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI   Certain documents cited
- ☐ Box No. VII   Certain defects in the international application
- ☐ Box No. VIII   Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further opinions, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/SE	Authorized officer
Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM	Behroz Moradi /itw
Facsimile No. +46 8 667 72 88	Telephone No. +46 8 782 25 00

Box No. I	Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

   ☐ This opinion has been established on the basis of a translation from the original language into the following language, _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

   a. type of material

   ☐ a sequence listing

   ☐ table(s) related to the sequence listing

   b. format of material

   ☐ in written format

   ☐ in computer readable form

   c. time of filing/furnishing

   ☐ contained in the international application as filed.

   ☐ filed together with the international application in computer readable form.

   ☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of: Box V

The method improves multiplexed characteristics of a communication gateway. The method provides enhanced scalability to enable support for flexible outside realm-initiated connections by dynamically establishing new gateway connection states that are triggered for each new connection by a respective identifier query initiated from a corresponding outside node. Preferably, an outside node that wants to initiate a new connection to an inside node prepares a user-resource identifier query, such as a DNS (Domain Name Server) query or equivalent, for transfer to a central allocation or addressing mechanism, which determines inside-realm network address information based on the inside node identifier included in the query. The identifier query from the outside node further includes predetermined connection information such as outside node address information and/or inside node port information. This predetermined connection information from the identifier query may then be used as a basis for identifying an outside-realm gateway address suitable for establishing a new dynamic gateway connection state for a flow between the outside node and the inside node through the gateway, (pages 9-12, 19- 22, claims 1- 61).

D3 describes a system and a method to proxy inbound connections to privately addressed hosts. A system and method for network address translation that enables an inbound connection from the public network to a privately addressed host residing on a private network. The stated invention functions as a reverse proxy mechanism assigning a dynamic port number to uniquely identify each inbound connection from the public network to a host on the private network. The defined proxy device uses regular and reverse mapping and employs use of the passive command to notify the client on the public network of the said unique port number assigned for the inbound connection. When the session is completed, the port is returned to the pool to be reassigned as needed.

D4 describes a communications apparatus and network system. A communication apparatus allows access to be gained from a global address network to a private address

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Form PCT/ISA/237 (Supplemental Box) (January 2004)

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of: Box V

network. An address converter assigns unique names (e.g., PC-B.home-a.com as an FQDN) to respective nodes belonging to the private address network and manages the nodes under the unique names. If there is an inquiry about a certain node from a certain node belonging to the global address network or another private address network, then the address converter acquires a corresponding private address (e.g., 192.168.0.2 if the inquiry is about PC-B.home-a.com) and notifies the node of the acquired private address. DNS servers for private address networks which do not belong to a tree of DNS servers on the global address network are provided in association with the respective private address networks, and are accessible from the global address network. Therefore, a name resolution for a private address can be achieved via the global address network.

D5 describes a Secure network communications. A method for a service provider on a private network to provide a service for an external client on an external network via a gateway bridging the private and external networks, including the service provider carrying out the steps of allocating a virtual name to the service provider, making the virtual name available to a client on the external network, binding the virtual name to the routing address of the gateway on the external network and binding the virtual name to the routing address of the service provider on the private network. The method finds particular application to network arrangements in which there is end-to-end security between the client and the service provider by providing a virtual name used globally for all routing so obviating the need for remapping of message address by the gateway.

A method and a system according to claims 1 and 5 is known from document D1 or D2 Thus, the invention defined in claims 1 and 5 is not new and consequently lacks novelty and inventive step.

Furthermore, the method and system referred to in claims 2-4 and 6-11 are considered to lack novelty or inventive step in view of not considered to differ essentially from what is known from the cited documents. If it can be shown that some

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Supplemental Box

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mail servers. However, since the dynamic IP address of the receiving mail server may not be stored in the private name server, the private name server may transmit a request for determining the dynamic IP address to the dynamic name server (= database). The request may include the receiving mail server code. The dynamic name server may extract the dynamic IP address based on the receiving mail server code. The dynamic IP address may then be transmitted to the delivering mail server. The delivering mail server may then deliver the mail to the receiving mail server utilizing the dynamic IP address transmitted from the private name server. The private name server thus **queries** the dynamic name server for the a record. An exemplary format for the query is the name query request. The dynamic name server stores the A record including the receiving mail server code and the dynamic IP address because the record was previously registered by the receiving mail server. Thus, the dynamic name server locates the record, for example, by executing a look-up algorithm of its A records using the receiving mail server code received in the **query** from the dynamic name server. The dynamic name server then transmits the record including the dynamic IP address and the receiving mail server code to the private name server. The private name server delivers the record to the delivering mail server. The delivering mail server then establishes an SMTP connection with the machine corresponding to the dynamic IP address specified by the record and delivers mail to that machine. Since the receiving mail server code and the dynamic IP address were registered by the receiving mail server, the mail reaches its intended destination, ([6], [12-17], [37], [50], claims 1-50).

D2 describes a method and system for enabling connections into networks with local address realm. The method involves preparing a user resource identifier query at an outside node that includes preset connection information, and identifying an outside realm gateway address based on the preset information. A dynamic gateway connection state is established based on the identified address, the preset information and inside-realm network address information, to enable an outside-realm initiated connection.

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Box No. V   Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims		YES
	Claims	1-11	NO
Inventive step (IS)	Claims		YES
	Claims	1-11	NO
Industrial applicability (IA)	Claims	1-11	YES
	Claims		NO

2. Citations and explanations:

Cited documents in the International Search Report:

D1: US2002004826 A1
D2: WO03088625 A
D3: US2003154306 A1
D4: US2003169766 A1
D5: US2002013848 A1
D6: EP1441483 A published 20040728.
D7: US6769031 B1 published 20040727.

D1 describes a method and system for securely delivering electronic mail to hosts having dynamic IP addresses. Before requesting mail delivery, a receiving mail server having a dynamic IP address registers its dynamic IP address along with a receiving mail server code (= network address) in memory accessible by a dynamic name server. The receiving mail server code is preferably also stored with the domain name for which the receiving mail server receives mail in memory accessible by a **private name server** (= PD). In response to a request (= query) for mail delivery, a delivering mail server utilizes the receiving mail server code stored in memory accessible by the **private name server** and the dynamic name server to determine (= translate/look up) the dynamic IP address. The delivering mail server first retrieves the receiving mail server code corresponding to the domain or domains for which the receiving mail server receives mail from the **private name server**. The private name server may store a database of resource records linking receiving mail server codes with domain names for a plurality of receiving

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aspect covered by claims 2-4 and 6-11 provides unexpected effects and the claims are restricted accordingly, the judgement may be reconsidered. Until these conditions are met, claims 2-4 and 6-11 are not considered to involve an inventive step.